CHAPTER 27

BUNDLE DELIVERY SYSTEM (WEDGE)

The bundle delivery system (referred to as a wedge because of its shape) is constructed with two Type II, 8-foot, modular airdrop platforms; a lightweight aluminum frame; four sections of skate wheel roller conveyors; and bundle release assemblies. The wedge weighs 930 pounds. It is designed to lock into the ramp restraint rails and to provide adequate tie-downs to secure various A-7A and A-21 configurations for flight. When positioned on the raised cargo ramp in flight, the wedge provides an inclined platform so that bundles can be released by rolling them out and off the ramp immediately before or after parachutists exit the doors.

27-1. APPLICATION

The wedge provides minimum dispersion between parachutists and equipment bundles on a single pass over the drop zone. The bundles can be released individually or in any group combination from the wedge when the loadmaster pulls the release pins from one or more release plates, depending on the number of bundles to be released at one time. Each release plate system employs a 1/8-inch-diameter steel release pin, restraint release plate, and 1-inch-wide tubular nylon restraint strap that secures each bundle, or each combination of bundles, to the wedge. A 1-inch-wide tubular nylon strap lanyard is attached to each steel release pin. Releasing the restraint strap allows the bundle(s) to roll off the aircraft ramp under the force of gravity.

27-2. RESTRICTIONS

The following restrictions apply when using the wedge:

a. **General Restrictions.** The wedge accommodates six A-7A or A-21 aerial delivery bundles, or a combination thereof, aboard the C-130 for cargo ramp airdrop. It limits parachutists to 20 per door. (The anchor line cable stops are positioned about 26 inches forward of the center anchor line cable supports.)

NOTE: Wedge bundles can be dropped only on the first pass across the drop zone.

b. **Bundle Sizes.** Bundle sizes are limited to 27 inches long by 42 inches wide by 48 inches high to include parachutes. The total rigged weight per jump must not exceed 538 pounds. Maximum allowable weight is 3,228 pounds for each six bundles-for example, maximum dimensions for mortar bundles are 27 inches long by 60 inches wide by 27 inches high (height dimension does not include the cargo parachute, paperboard honeycomb, and skid board). Mortar bundles must weigh between 320 pounds and 538 pounds (weights include skid board and cargo parachute). These dimensions allow up to three mortar bundles to be configured on the wedge, or mortar bundles can be mixed with smaller (27 inches by 42 inches) bundles to facilitate cross-loading. Two configurations are possible when mixing bundles: one mortar and four normal-size bundles (27 inches by 42 inches) or two mortar and two normal-size bundles.

c. **Aircraft.** During tactical training (visual or instrument flight regulations), bundle drops are restricted to the first three aircraft.

27-3. RIGGING PROCEDURES

Aerial delivery units usually rig the wedge; however, the system may be rigged in the airborne unit area. The areas of responsibility overlap; therefore, the JM must be familiar with the rigging procedures. However, the wedge must have a final inspection by a qualified rigger before the wedge leaves the rigging site.

27-4. BUNDLE DROP SEQUENCE

Bundles may be dropped from the wedge in the following sequence:

- A single bundle before and after the parachutists exit.
- A single unit of two to three bundles before or after the parachutists exit.
- Two units of two or three bundles for each drop with one unit dropped before and one unit after the parachutists exit.

The bundle sequence is determined before loading the wedge. If single bundles are to be dropped, a restraint strap and release lanyard are required for each bundle. If multiple bundles are to be dropped in units of two or three, a restraint strap and release lanyard are required for the aft bundle in each unit (FM 10-501/TO 13C7-1-11). Three exceptions are as follows:

a. **A-7 and A-21 Bundles.** The skid board size is 27 inches by 42 inches by 3/4 inch. Drill the skid board and center a 1-inch hole on the 42-inch side, 1 inch from the edge. Place two layers of honeycomb the size of the bundle on the skid board.

b. **Bundle Restraint Strap.** A restraint strap is formed by cutting a 12-foot length of 1-inch-wide tubular nylon webbing (requirement for maximum-size bundle). Form a 6-inch loop, with an overhand knot, 3 feet from one end of the strap. Lay the tie across the honeycomb with the loop next to the center hole in the skid. The 3-foot length of strap should be at the front of the skid (the front

is the side with the 1-inch hole nearest the edge). Place the bundle on top of the honeycomb and rig the bundle (FM 10-500-3/TO 13C7-1-11). Place the running ends of the restraint strap on top of the rigged bundle in preparation for loading on the wedge.

c. **Cargo Parachutes.** Use G-14 cargo parachutes, rigged with nonbreakaway static lines without drogue for A-7A or A-21 bundles dropped from the wedge. Attach the parachutes to the bundles after they are loaded aboard the wedge and restraint straps are secured.

27-5. INSPECTION

Before bundles are loaded, the wedge is inspected for completeness and serviceability, and to ensure that the roller conveyors are properly positioned and secured to the platform. The bundle release plates are correctly installed as follows:

a. **Left-Side Release Plates.** Install left-side release plates (three each) between roller conveyors 1 and 2 at rollers 1, 2, 11, and 12, 21, 22, counting from the front to the rear of the wedge.

b. **Right-Side Release Plates.** Install right-side release plates between roller conveyors 3 and 4 at roller positions 1, 2, 11, and 12, 21, 22.

c. **Release Lanyard.** Install a 1-inch-wide tubular nylon webbing release lanyard with a 5 ¾-inch by 1/8-inch steel pin and ensure it is serviceable, marked, and secured to the correct release plate with a 20-inch length of Type III nylon cord. (The 20-inch cord forms a safety to prevent rebound of the lanyard and possible injury to personnel releasing the bundles.)

NOTE: If a lanyard is unserviceable, make a new one with a length of 1-inch tubular nylon webbing and a 5 ¾-inch by 1/8-inch steel pin. Using a bowline knot, attach the pin to one end of the webbing. Insert the pin in the appropriate release plate hole and extend the webbing forward to a point 30 inches forward (of the forward edge) of the wedge. Cut the webbing and forma 6-inch loop in the running end to provide a secure handhold for releasing the bundles.

27-6. LOADING, RIGGING, AND RESTRAINING BUNDLES TO WEDGE

Bundles are loaded, rigged, and secured to the wedge at the rigging site, and then transported to the aircraft for loading. The following procedure is for loading and rigging bundles to be dropped individually.

a. Load bundle number 3, left unit, with the loop of the restraint strap forward.

b. Position the loaded skid board with the 1-inch hole centered over the hole in the forward release plate. Pass the 6-inch loop of the restraint strap down through the hole in the board and release plate. Insert the release lanyard pin through the restraint strap loop and the hole in the release plate.

c. Form a loop in the forward running end of the restraint strap. Pass the forward running end of the restraint strap through the loop, cinch the strap tight around the bundle, and secure with two half hitches and an overhand knot.

d. Secure the release lanyard pin with one complete turn (attach cotton ticket number 8/7). Pass the cord down through the hole in the release plate and through the pin loop. Tie the running end with a square knot and a locking knot.

NOTE: Repeat the above procedure for each bundle in the following sequence: bundles number 2 and 1, left side; bundles numbers 3, 2, and 1, right side.

e. Position, attach, and secure G-14 cargo parachutes to the bundles. Using tie-down straps, secure the bundles to the wedge to prevent movement and possible damage to the release pin during transport and to the wedge when loading aboard the aircraft.

NOTE: If bundles are to be dropped in multiples of two or three, only the aft bundle requires a restraint strap and release lanyard. Bundles are loaded on the wedge in reverse order—left to right, front to rear-with the loop of the restraint loop strap forward.

27-7. JUMPMASTER PROCEDURES

JM procedures include managing anchor line cables and performing inspections before and after loading.

a. **Anchor Line Cables.** The JM ensures that—

(1) Anchor line cables are disconnected from the center anchor cable supports and secured to preclude obstruction to personnel.

(2) Stops are installed and taped on the inboard anchor line cable at fuselage station 749 for the bundle static lines, and about 26 inches forward of the center anchor cable support for parachutist static lines.

NOTE: Static line retrieval spools are forward of these stops. The stops and spools are adjusted so that the distance from the forward edge of the anchor cable supports to the forward edge of the spool is 26 inches.

b. **Inspection Before Loading.** The JM is responsible for inspecting, with a qualified parachute rigger, the following items on the wedge before loading. (He also inspects them with the loadmaster after loading.)

- Bundles (FM 10-500-3/TO 13C7-1-11) A-7A or A-21 are present and are properly secured to plywood skid board.
- Quick-release assemblies are properly seated and safety clip is inserted (A-21 bundle).
- Correct size and layers of honeycomb are present.
- Bundles are properly secured to plywood skid board.

- A 1-inch tubular nylon restraint strap is routed vertically around bundles, with a 6-inch lanyard overhand loop at the release point.
- G-14 cargo parachute(s) is rigged for nonbreakaway and without drogue.
- Parachute is properly attached and secured to bundle(s).

c. Inspection After Loading. The JM is responsible for inspecting the wedge for correct positioning and locking into the aircraft restraint rails when the following actions are accomplished:

- Wedge is positioned so that aft restraint rail lock in platform number 6 indent is in place (counting from the rear of the platform).
- Cargo parachute static lines are connected to the inboard anchor line cables forward of the stops at station 749.
- Bundle release lanyards are correctly routed.
- Release pins are seated in the release plates.
- Safety tie is in place.
- Bundles are secured for flight.

27-8. BRIEFING RELEASE PROCEDURES

Briefing release procedures include the following:

a. Identify the jumpmaster, loadmaster, safety personnel, and assistants, and brief each individual on his responsibilities.

b. Coordinate type signals to be used to conduct the drop—for example, thumbs-up for DROP, thumbs-down for NO DROP.

c. Coordinate bundle release and parachutist exit sequence to be used—for example, on the green light, the number 1 loadmaster releases the bundle(s) on his side of the aircraft. All parachutists will exit after the last bundle clears the aircraft ramp. After the last parachutist exits the aircraft, safety personnel give a thumbs-up, signaling the number 2 loadmaster to release the bundle(s) on his side of the aircraft.

d. Review procedures for a bundle hung up in the aircraft-for example, the loadmaster will signal NO DROP and notify the pilot; the pilot turns on the NO DROP red light. The drop is canceled if the problem cannot be immediately identified and safely corrected.

27-9. LOADMASTER AND JUMPMASTER DUTIES DURING FLIGHT

Airdrop sequence of bundles and personnel include:

a. **Loadmaster.** At the 3-minute slowdown, the loadmaster raises the cargo door and installs the anchor line cables in the center anchor line cable supports.

b. **Jumpmaster.**

(1) The JM hooks up, issues the 6-minute warning, and begins the jump commands.

NOTE: All commands are the same (whether using the wedge or not) unless all bundles are to be released before the exit of the parachutists. Then, the command STAND BY is given. The number 1 parachutist in each door assumes a position at a 10-degree angle to the forward edge of the doors and observes the JM.

(2) JM issues the last jump command, GO.

(a) Bundles precede jumpers. On the green light, the loadmasters release the bundles. When the JM observes that the last bundle has cleared the aircraft ramp, he gives the command GO. All parachutists then exit the aircraft.

(b) Jumpers precede bundles. If all bundles are to be released after the parachutists exit, the JM gives the command STAND BY for the first two parachutists. On the green light, the command GO is given. When the parachutists have exited, the static safety personnel give a thumbs-up signal for the loadmaster to release the bundles.

(c) Bundles released before and after the jumpers. On the green light, the number 1 loadmaster releases the required bundles. When the JM observes that the last bundle has cleared the aircraft ramp, he gives the command GO. All parachutists then exit, and the static safety personnel signal thumbs-up to the number 2 loadmaster to release the remaining bundles. Static lines are retrieved, and the cargo and troop doors are secured by the loadmaster.